



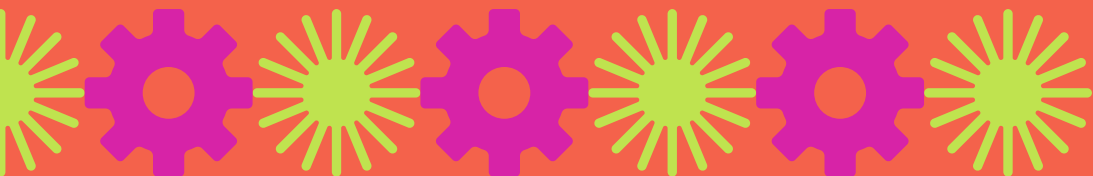
Millers
for
Nutrition



Case Study

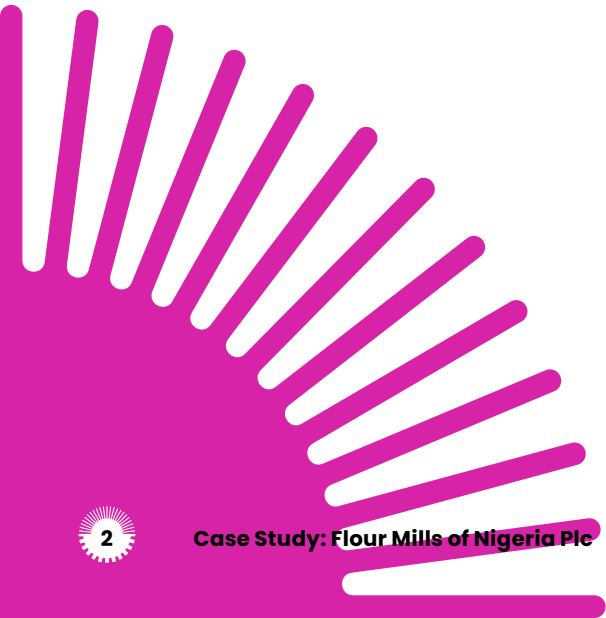
Flour Mills of Nigeria Plc

Managing Quality
Across Multiple Production
Sites in Nigeria



Summary

Flour Mills of Nigeria Plc (FMN), with its flagship consumer brand Golden Penny, is one of the largest flour producers in Nigeria. The company operates several production sites across the country. Consistent fortification is ensured through a centralized and standardized quality assurance and quality control (QA/QC) approach. Key components include centralized premix management, standardized processes, regular laboratory testing and independent verification, as well as qualification of staff. These efforts yielded reliable results, which were recognized by the Micronutrient Fortification Index with the Vitamin A Compliance Champion award for wheat flour as well as the Excellence Award in 2025.






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Context: Multiple production sites across Nigeria



Flour Mills of Nigeria Plc was founded in 1960 as Nigeria's first wheat milling company. Over the past six decades, the company has evolved into one of Africa's largest food businesses. The company's well-known Golden Penny brand is widely recognized in Nigerian households and includes a broad range of staple food products such as wheat flour, semolina, pasta, noodles, vegetable oils, margarine, sugar, snacks, and breakfast cereals. These products form an important part of daily diets across the country.

Wheat milling remains the financial backbone of FMN's operations. The company's flagship milling complex in Apapa, Lagos, is among the largest flour mills in the world, with a daily grinding capacity exceeding 8,000 metric tonnes of wheat. In addition to Apapa, FMN operates several milling facilities across Nigeria, including sites in Lagos, Calabar, Ibadan, and Kano. Some of them have been acquired as part of company buy-outs and hence need to be streamlined into corporate procedures. Each of these facilities produces flour and other grain-based products for regional markets.

Food fortification is a critical component of Nigeria's strategy to address micronutrient deficiencies. Wheat flour fortification with essential micronutrients such as iron and vitamin A helps improve population nutrition because flour is consumed widely across the country. Large milling companies therefore play a crucial role in ensuring that fortified foods consistently meet regulatory standards and deliver the intended nutritional benefits.



FMN flour mill in Apapa

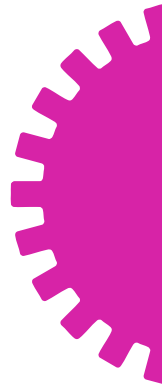
Objective: high-quality food



“True excellence in food fortification compliance comes from continuous improvement, ensuring that every product contributes positively to consumer nutrition and health.”

Jessica Nworgu
Quality Head, Flour Operations

FMN is committed to delivering high-quality, nutritious food products by maintaining strong food safety and quality standards across its operations. However, ensuring consistent fortification quality across multiple milling sites presents operational challenges. Variations in raw materials, production processes, and equipment can affect micronutrient levels. To address these challenges, FMN has implemented a structured and centralized quality assurance approach that ensures consistency across its entire milling network.



A comprehensive quality management approach



FMN has developed a comprehensive quality assurance and quality control system that operates across the entire production chain—from ingredient procurement to finished product verification. Key elements include (1) centralized premix management, (2) standardized quality management systems, (3) laboratory testing and verification, (4) qualification and certification of staff and (5) supplier quality management.

(1) Centralized premix management

A core component of FMN's system is centralized premix management. Micronutrient premix used for flour fortification is received and initially tested at the Apapa milling complex. This facility serves as the central hub for premix distribution to other milling sites across the country. Once the premix has been tested and approved, it is used in Apapa's production and distributed to the regional mills.






(2) Standardized quality management systems

FMN maintains consistent quality management practices across all its milling sites. Each facility follows the same fortification procedures, documentation requirements, and testing protocols. Quality managers at each site work closely with the central quality management team to ensure alignment. Updates and guidance are shared regularly to maintain consistent practices across facilities. For example, quality control teams conduct routine “additive checks” to verify that the premix is being added at the correct dosage level. For wheat flour production, the premix dosage is typically around 2 milligrams per kilogram of flour. These routine checks help detect and correct any deviations in real time, ensuring that the fortification process remains within required limits.

(3) Laboratory testing and verification

Laboratory testing in Apapa is a key pillar of FMN's fortification quality assurance system. In addition to testing the incoming premix, finished flour products are tested periodically to verify micronutrient levels. The laboratory uses BioAnalyt's iCheck system to validate levels of iron and vitamin A. Product samples are also sent to external laboratories for independent analysis. TechnoServe has supported this process as part of FMN's membership in the Millers for Nutrition coalition.

(4) Building technical capacity



Recognizing the importance of skilled personnel, FMN has invested in specialized training. Six analysts from three milling sites have been certified as Certified Food Micronutrient Analysts (CFMA). This certification program was implemented through collaboration between the Global Alliance for Improved Nutrition (GAIN) and the Institute of Public Analysts of Nigeria (IPAN). The program provides globally recognized accreditation for professionals conducting micronutrient testing. The certification process strengthens the analytical capabilities of FMN's laboratory teams and contributes to more reliable monitoring of fortified products. The company plans to expand this initiative by certifying additional analysts in the future.

(5) Supplier quality management

FMN also strengthens quality assurance through supplier management. Vendors supplying key inputs—including premix suppliers—are audited periodically to ensure compliance with quality and safety requirements. These audits help ensure that raw materials entering the production chain meet required standards. While conducting on-site audits of international suppliers can sometimes present logistical challenges, FMN continues to work toward strengthening supplier verification systems.

Results

“Maintaining consistent fortification quality across multiple mills requires strong systems, skilled analysts, and continuous monitoring. Investing in these areas ensures that fortified foods truly deliver their intended nutritional benefits.”

Ifeoma S. Enyi
Quality Assurance Manager

FMN representatives receive the MFI awards in August 2025 in Lagos, Nigeria. Left is Jessica Nworgu, Head of Quality, Flour Operations. Middle is Veronica Kalu-ufe, Quality Assurance Manager, Golden Sugar Company.

FMN's structured approach to quality assurance has helped the company establish a strong and reliable system for managing flour fortification across multiple production sites. The consistent fortification was confirmed by the Micronutrient Fortification Index, an annual ranking based on company data as well as independent validation through market spot tests. In August 2025, Golden Penny wheat flour was recognized as Vitamin A Compliance Champion as well with a first position in the Excellence Awards.

Overall, FMN's experience highlights how large milling companies can successfully maintain high standards of flour fortification while operating at industrial scale. By combining centralized oversight, rigorous testing procedures, staff training, and collaboration with external partners, FMN has developed a robust quality management system that supports the consistent delivery of fortified staple foods to Nigerian consumers.



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Written by

Dr. Christina Tewes-Gradl, Endeva GmbH

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Millers for Nutrition Coalition
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